

CITY OF FAIRFIELD

RESOLUTION NO. 2018 - 03

RESOLUTION OF THE CITY COUNCIL OF THE CITY OF FAIRFIELD AUTHORIZING
THE CITY MANAGER TO EXECUTE A DESIGN SERVICES AGREEMENT
BETWEEN THE CITY OF FAIRFIELD AND MEAD AND HUNT, INC. TO UPDATE
THE EMERGENCY ACTION PLAN FOR THE PENNSYLVANIA CREEK DAM

WHEREAS, the City is required to prepare inundation maps and update the emergency action plan for the Pennsylvania Creek Dam; and

WHEREAS, Mead & Hunt is qualified to perform the engineering and design work; and

WHEREAS, the City has selected Mead & Hunt to provide design services for an amount not to exceed \$36,351.

NOW, THEREFORE, THE COUNCIL OF THE CITY OF FAIRFIELD HEREBY RESOLVES:

Section 1. The City Manager is hereby authorized and directed to execute on behalf of the City of Fairfield the design services agreement with Mead & Hunt for Pennsylvania Creek Dam Inundation Mapping and Emergency Action Plan Update Project for an amount not to exceed thirty-six thousand, five hundred thirty-one dollars (\$36,531).

Section 2. The Public Works Director is authorized to execute and administer amendments in an amount not to exceed seven thousand, three hundred six dollars (\$7,306).

PASSED AND ADOPTED this 16th day of January, 2018, by the following vote:

AYES: COUNCILMEMBERS: PRICE/TIMM/BERTANI/~~MOY~~/ACCARO

NOES: COUNCILMEMBERS: NONE

ABSENT: COUNCILMEMBERS: Moy

ABSTAIN: COUNCILMEMBERS: NONE

Harry F. Price
MAYOR

ATTEST:
Karen L. Rees
CITY CLERK
pw

AGREEMENT FOR DESIGN SERVICE
PENNSYLVANIA CREEK DAM
INUNDATION MAPPING AND EMERGENCY ACTION PLAN UPDATE

THIS AGREEMENT, made and entered into as of January 24, 2018, by and between the CITY OF FAIRFIELD, a municipal corporation, hereinafter referred to as "CITY" and MEAD & HUNT, INC., a Wisconsin corporation, hereinafter referred to as "CONSULTANT."

RECITALS

A. CITY desires to contract for certain consulting work necessary for the PENNSYLVANIA CREEK DAM INUNDATION MAPPING AND EMERGENCY ACTION PLAN UPDATE, and for the purposes of this Agreement shall be called "PROJECT," and,

B. CONSULTANT is willing and qualified to undertake the consulting work;

NOW, THEREFORE, in consideration of the mutual promises, covenants and agreements herein set forth, the parties do hereby agree as follows:

AGREEMENT

I. DUTIES OF CONSULTANT

The CONSULTANT shall provide professional consulting services required for design and update of the PROJECT as follows (collectively, "Consultant's Services"):

A. Project Coordination. The CONSULTANT's primary contact with the CITY shall be the CITY's Project Manager (David Vong) or any other as designated by the City Engineer.

- B. Project Scope. The CONSULTANT shall provide the engineering design services in accordance with the Scope of Work attached hereto as Exhibit "A" and incorporated herein by this reference.
- C. CONSULTANT shall, at its sole cost and expense, furnish all facilities and equipment, which may be required for furnishing services pursuant to this Agreement.

II. DUTIES OF CITY

The CITY shall:

- A. Make available previous plans, reports, and all other data relative to the design of the PROJECT and full information as to the CITY's requirements, including title reports and condemnation guarantees as required.
- B. Review preliminary and final plans, specifications, estimates, and other documents presented by CONSULTANT and render decisions within a reasonable time, and give prompt notice to CONSULTANT at any time CITY observes or otherwise becomes aware of any error, omission, or defect in the PROJECT.
- C. Provide soils reports if necessary.
- D. Provide for all necessary environmental clearances.
- E. Reproduce and distribute bid documents, advertise the project for bidding purposes, maintain a plan holders list, and distribute addenda.
- F. Provide construction management services as required.
- G. Provide construction inspection and red-lined drawings from which CONSULTANT shall prepare "Record Drawings".
- H. Make all necessary provisions for CONSULTANT to enter upon public and private property as required in the performance of Consultant's Services under this Agreement.

III. MISCELLANEOUS PROVISIONS

- A. CONSULTANT shall not assign any rights or duties under this Agreement to a third party without the prior written consent of CITY.

- B. It is understood by and between the parties hereto that CONSULTANT, in the performance of this Agreement, shall act as, and be, an independent contractor and not an agent or employee of CITY. CITY shall have the right to control CONSULTANT only insofar as the results of CONSULTANT's Services rendered pursuant to this Agreement; however, CITY shall not have the right to control the means by which CONSULTANT accomplishes the Consultant's Services rendered pursuant to this Agreement.
- C. CONSULTANT represents and warrants to CITY that CONSULTANT has all licenses, permits, qualifications and approvals of whatsoever nature which are legally required for CONSULTANT to practice CONSULTANT'S profession. CONSULTANT represents and warrants to CITY that CONSULTANT shall, at its sole cost and expense, keep in effect at all times during the term of this Agreement, any licenses, permits, and approvals which are legally required for CONSULTANT to practice his or her profession.
- D. Except as CITY may specify in writing, CONSULTANT shall have no authority, express or implied, to act on behalf of CITY in any capacity whatsoever as an agent. CONSULTANT shall have no authority, express or implied, pursuant to this Agreement, to bind CITY to any obligation whatsoever.
- E. CONSULTANT shall assign only competent personnel to perform Consultant's Services. In the event that CITY, for reasonable cause, at anytime during the term of this Agreement, desires the removal of any person or persons assigned by CONSULTANT to perform Consultant's Services, CONSULTANT shall remove any such person immediately upon receiving notice from CITY of the desire of CITY for the removal of such person or persons.
- F. CONSULTANT shall perform Consultant's Services in the manner and according to the standards observed by a competent practitioner of the profession in which CONSULTANT is engaged in the geographical area in which CONSULTANT practices his or her profession. All products of

whatsoever nature which CONSULTANT delivers to CITY pursuant to this Agreement shall conform to the standards of quality normally observed by a person practicing in CONSULTANT's profession and in a manner reasonably satisfactory to City.

- G. CONSULTANT is not a "public official" for purposes of Government Code §§ 87200 et seq. CONSULTANT conducts research and arrives at conclusions with respect to his or her rendition of information, advice, recommendation or counsel independent of the control and direction of the CITY or any CITY official, other than normal contract monitoring. In addition, CONSULTANT possesses no authority with respect to any CITY decision beyond the rendition of information, advice, recommendation or counsel.
- H. The parties hereto agree to immediately and diligently proceed with their respective duties as set forth herein to the end that the PROJECT will be completed satisfactorily within the shortest reasonable time.
- I. The CONSULTANT is not responsible for delay, nor shall CONSULTANT be responsible for damages or be in default or deemed to be in default by reason of strikes, lockouts, accidents, or acts of God; or the failure of CITY to furnish timely information or to approve or disapprove CONSULTANT's Services promptly; or delay or faulty performance by CITY, other contractors, or governmental agencies; or any other delays beyond CONSULTANT's reasonable control.

IV. COMPENSATION OF CONSULTANT

- A. Basis of Compensation. For and in consideration of Consultant's Services, CITY agrees to pay CONSULTANT, and CONSULTANT agrees to accept from CITY as full compensation for said services the following maximum, not to exceed, amount(s) in accordance with the fee proposals attached as Exhibit "A"
 - 1. For those services described in Section I, compensation shall be on a lump sum basis with a maximum fee not to exceed

THIRTY-SIX THOUSAND FIVE HUNDRED THIRTY-ONE DOLLARS
(\$36,531).

B. Extra Work and Change Order Fee. Extra Work performed by the CONSULTANT for any work required by the CITY which is not specified as part of Consultant's Services in Section I, including but not limited to, any changes to CONSULTANT's Services including but not limited to contract change orders after the award of the construction contract by the City Council, or testimony in Court, shall be compensated by the use of the time and material fee rates of the attached Exhibit "B." No extra work will be compensated for unless required by CITY in writing.

C. Schedule of Payments.

1. CONSULTANT shall submit, and CITY shall pay, monthly invoices for work performed during the previous month. For the time and material services billing shall be based on the hourly and fee rate charges set forth in Exhibit "B" attached hereto, and on the number of hours expended on the PROJECT by each classification of employee.
2. In the event PROJECT is terminated, CITY shall pay to CONSULTANT full compensation for work performed up until the date of CONSULTANT's receipt of written notification to cease work on the PROJECT.
3. CONSULTANT shall notify the CITY in writing when the CONSULTANT's invoices total billing is within 25% of the contract compensation as indicated in Section IV.A.

V. TIME OF COMPLETION

Consultant's Services shall be completed no later than January 1, 2019.

VI. PROJECT MANAGER

CONSULTANT designates Rahul Ranade as Project Manager, to remain such unless or until CONSULTANT requests to change said designation and said request is approved by CITY. Major duties shall include:

- A. Personally direct all work essential to the PROJECT.
- B. Sign all letters and instruments as requested by, and on behalf of, CITY.
- C. Attend public meetings related to the PROJECT.

VII. CANCELLATION OF AGREEMENT

This Agreement may be canceled at any time by CITY for its convenience upon written notification to CONSULTANT. CONSULTANT shall be entitled to receive full compensation payment for all services performed and all costs incurred to the date of receipt of written notice to cease work on the PROJECT. Said compensation will be determined in accordance with Section IV. CONSULTANT shall be entitled to no further compensation for work performed after the date of receipt of written notice to cease work on the PROJECT.

VIII. INDEMNIFY AND HOLD HARMLESS

- A. Indemnity for Design Professional Services. In connection with its design professional services hereunder, Consultant shall hold harmless and indemnify City, and its elected officials, officers, employees, servants, designated volunteers, and those City agents serving as independent contractors in the role of City officials (collectively, "Indemnitees"), with respect to any and all claims, demands, damages, liabilities, losses, costs or expenses, including reimbursement of attorneys' fees and costs of defense (collectively, "Claims" hereinafter), including but not limited to Claims relating to death or injury to any person and injury to any property, which arise out of, pertain to, or relate to in whole or in part to the negligence, recklessness, or willful misconduct of Consultant or any of its officers, employees, subcontractors, or agents in the performance of its design professional services under this Agreement.
- B. Other Indemnities. In connection with any and all claims, demands, damages, liabilities, losses, costs or expenses, including attorneys' fees and costs of defense (collectively, "Damages" hereinafter) not covered by Section VIII. A, Consultant shall defend, hold harmless and indemnify the

Indemnitees with respect to any and all Damages, including but not limited to, Damages relating to death or injury to any person and injury to any property, which arise out of, pertain to, or relate to the acts or omissions of Consultant or any of its officers, employees, subcontractors, or agents in the performance of this Agreement, except for such loss or damage arising from the sole negligence or willful misconduct of the City, as determined by final arbitration or court decision or by the agreement of the parties. Consultant shall defend Indemnitees in any action or actions filed in connection with any such Damages with counsel of City's choice, and shall pay all costs and expenses, including all attorneys' fees and experts' costs actually incurred in connection with such defense. Consultant's duty to defend pursuant to this Section VIII. B shall apply independent of any prior, concurrent or subsequent misconduct, negligent acts, errors or omissions of Indemnitees.

- C. Survival of Indemnification Obligations. Acceptance of insurance certificates and endorsements required under this Agreement does not relieve CONSULTANT from liability under this indemnification and hold harmless clause. The Indemnities in this Section VIII shall apply whether or not such insurance policies shall have been determined to be applicable to any of such damages or claims for damages.

IX. INSURANCE

During the term of this Agreement CONSULTANT shall obtain and maintain in full force and effect at his/her own cost and expense the following insurance coverage:

- A. Worker's Compensation Insurance. Worker's Compensation Insurance, as required by the State of California, shall be provided that is necessary in connection with the performance of this Agreement. Such insurance shall relieve CITY from all responsibility for such benefits. Said policy shall also include employer's liability coverage no less than one million dollars (\$1,000,000.00) per accident for bodily injury and disease.

- B. General Liability Insurance. CONSULTANT shall obtain at its sole cost and keep in full force and effect during the term of this agreement commercial general liability insurance in the amount of one million dollars (\$1,000,000.00) per occurrence for bodily injury, personal injury, and property damage. Said insurance shall provide (1) that the CITY, its officers, agents, employees, and volunteers shall be named as additional insureds under the policy, and (2) that the policy shall operate as primary insurance, and that (3) no other insurance effected by the CITY or other named insureds will be called upon to cover a loss covered thereunder.
- C. Automobile Liability Insurance. CONSULTANT shall obtain at its sole cost and keep in full force and effect during the term of this agreement automobile liability insurance in the amount of one million dollars (\$1,000,000.00) per occurrence for bodily injury and property damage. Said insurance shall provide (1) that the CITY, its officers, agents, employees, and volunteers shall be named as additional insureds under the policy, and (2) that the policy shall operate as primary insurance, and that (3) no other insurance effected by the CITY or other named insureds will be called upon to cover a loss covered thereunder.
- D. Certificates of Insurance. CONSULTANT shall file with the CITY's Director of Public Works upon the execution of this agreement, certificates of insurance which shall provide that no cancellation, major change in coverage, expiration, or renewal will be made during the term of this Agreement, without thirty (30) days written notice to the Director of Public Works prior to the effective date of such cancellation, or change in coverage.
- E. Professional Liability Insurance. During the term of this Agreement, CONSULTANT shall maintain a professional liability insurance policy covering any loss arising out of errors, omissions, or negligent actions of CONSULTANT in the amount of not less than one million dollars (\$1,000,000.00).

X. OWNERSHIP OF DOCUMENTS

All documents prepared by CONSULTANT in the performance of his or her duties under this Agreement, including but not limited to, the plans, reproducible mylar plans, specifications, studies, reports, and contract documents shall be the property of the City of Fairfield. If this Agreement is canceled in accordance with Section VII above, all completed and partially completed documents prepared by CONSULTANT shall be delivered to the CITY in both printed and electronic format within two weeks of notice of cancellation. CONSULTANT shall not obtain or attempt to obtain copyright protection as to any documents prepared hereunder.

XI. SCOPE OF AGREEMENT

This writing constitutes the entire agreement between the parties relative to CONSULTING services on the PROJECT and no modification hereof shall be effective unless or until such modification is evidenced by a writing signed by both parties to this Agreement.

XII. PROHIBITED INTERESTS

No employee of the City of Fairfield shall have any direct financial interest in this Agreement. This Agreement shall be voidable at the option of the CITY if this provision is violated.

XIII. LOCAL EMPLOYMENT POLICY

- A. The City of Fairfield desires wherever possible to hire qualified local residents to work on City projects. Local resident is defined as a person who resides in Solano County.
- B. The City encourages an active affirmative action program on the part of its contractors, consultants, and developers.
- C. When local projects require, subcontractors, contractors, consultants, and developers will solicit proposals from qualified local firms where possible.
- D. As a way of responding to the provisions of the Davis-Bacon Act and this program, contractors, consultants, and developers will be asked to provide

no more frequently than monthly, a report which lists the employee's name, job class, hours worked, salary paid, City of residence, and ethnic origin.

XIV. EMPLOYMENT DEVELOPMENT DEPT. REPORTING REQUIREMENTS.

When CITY executes an agreement for or makes payment to CONSULTANT in the amount of \$600 (six hundred dollars) or more in any one calendar year, CONSULTANT shall provide the following information to CITY to comply with Employment Development Department (EDD) reporting requirements:

- A. Whether CONSULTANT is doing business as a sole proprietorship, partnership, limited liability partnership, corporation, limited liability corporation, non-profit corporation or other form of organization.
- B. If CONSULTANT is doing business as a sole proprietorship, CONSULTANT shall provide the full name, address and social security number or federal tax identification number of the sole proprietor.
- C. If CONSULTANT is doing business as other than a sole proprietorship, CONSULTANT shall provide CONSULTANT's federal tax identification number.

XV. MISCELLANEOUS PROVISIONS

A. Legal Action.

- 1. Should either party to this Agreement bring legal action against the other, the validity, interpretation, and performance of this Agreement shall be controlled by and construed under the laws of the State of California, excluding California's choice of law rules. Venue for any such action relating to this Agreement shall be in the Solano County Superior Court.
- 2. If any legal action or other proceeding, including action for declaratory relief, is brought for the enforcement of this Agreement or because of an alleged dispute, breach, default or misrepresentation in connection with this Agreement, the prevailing party shall be entitled to recover

reasonable attorneys' fees, experts' fees, and other costs, in addition to any other relief to which the party may be entitled.

3. Should any legal action about a project between CITY and a party other than CONSULTANT require the testimony of CONSULTANT when there is no allegation that CONSULTANT was negligent, CITY shall compensate CONSULTANT for its testimony and preparation to testify at hourly rates that are agreed-upon in advance in writing by both parties.

- B. Entire Agreement; Modification. This Agreement, including any other documents incorporated herein by specific reference, represents the entire and integrated agreement between CITY and CONSULTANT and supersedes all prior negotiations, representations or agreements, either written or oral. This Agreement may be modified or amended, or provisions or breach may be waived, only by subsequent written agreement signed by both parties.
- C. Non-Waiver of Terms, Rights and Remedies. Waiver by either party of any one or more of the conditions of performance under this Agreement shall not be a waiver of any other condition of performance under this Agreement. In no event shall the making by the CITY of any payment to CONSULTANT constitute or be construed as a waiver by the CITY of any breach of covenant, or any default which may then exist on the part of CONSULTANT, and the making of any such payment by the CITY shall in no way impair or prejudice any right or remedy available to the CITY with regard to such breach or default.
- D. Time. Time is of the essence in the performance of this Agreement.
- E. Severability. If any term or portion of this Agreement is held to be invalid, illegal, or otherwise unenforceable by a court of competent jurisdiction, the remaining provisions of this Agreement shall continue in full force and effect.
- F. Notices
Except as otherwise required by law, any notice, request, direction, demand, consent, waiver, approval or other communication required or permitted to be given hereunder shall not be effective unless it is given in writing and

shall be delivered (a) in person or (b) by certified mail, postage prepaid, and addressed to the parties at the addresses stated below, or at such other address as either party may hereafter notify the other in writing as aforementioned:

To CITY:

ATTN: Julie B. Lucido

Assistant Public Works Director/City Engineer
City of Fairfield
Public Works Department
1000 Webster Street
Fairfield, CA 94533

To CONSULTANT:

ATTN: Rahul Ranade

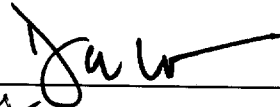
Senior Associate
Mead & Hunt, Inc.
180 Promenade Circle, Ste 240
Sacramento, CA 95834

A party may change its address by giving written notice to the other party. Thereafter, any notice or other communication shall be addressed and transmitted to the new address. If sent by mail, any notice, tender, demand, delivery or other communication shall be deemed effective three (3) business days after it has been deposited in the United States mail. For purposes of communicating these time frames, weekends and CITY holidays shall be excluded. No communication via facsimile or electronic mail shall be effective to give any such notice or other communication hereunder.


- G. Counterparts. This Agreement may be executed in counterparts, each of which shall be considered an original.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement as of
January 24, ~~2017~~²⁰¹⁸.

CITY OF FAIRFIELD
a municipal corporation (CITY)



JB David A. White
City Manager

By 

(CONSULTANT)

EXHIBIT "A"

Project Scope and Lump Sum Rate For:

Pennsylvania Creek
Inundation Mapping and Emergency Action Plan Update



October 31, 2017

Ryan Panganiban
City of Fairfield
1000 Webster Street
Fairfield, CA 94533

Subject: Proposal for Inundation Mapping and Emergency Action Plan Update for Pennsylvania Creek Dam

Ryan:

Mead & Hunt, Inc. (Mead & Hunt) is pleased to submit this proposal to provide engineering services for the above-referenced project.

Project Understanding

The City of Fairfield (City) owns and operates the Pennsylvania Creek Dam located in the City of Fairfield, just north of the Travis Boulevard interchange off Interstate 80. The dam, constructed in 1958, consists of a 3,100-foot-long earthfill structure which creates a storage capacity of 148 acre-feet. The maximum height of the dam is 14 feet.

The purpose of the reservoir formed by the dam is to retain stormwater inflows to control flooding. The reservoir receives natural inflows from 1.7 square miles of watershed area. Approximately a quarter of this contributing area consists of the fully developed areas south of the Putah South Canal, while the rest is the largely undeveloped area north of the canal. The reservoir is designed to drain completely after a storm event. Outflow from a hypothetical breach of the Pennsylvania Creek Dam would drain to the Suisun Slough in Suisun City.

The Pennsylvania Creek Dam is regulated by the California Department of Water Resources (DWR) Division of Safety of Dams (DSOD) and identified as Dam No. 1052-002. Prior to July 2017, there was no enforceable requirement for dam owners in California to prepare inundation maps or EAPs. However, Water Code Sections 6160 and 6161, which came into effect on July 1, 2017, require dam owners to prepare an inundation map and EAP for each jurisdictional dam, unless the dam is classified as low-hazard. On October 19, 2017, emergency regulations proposed by DWR were accepted by the Office of Administrative Law (hereinafter referred to as 'DWR Emergency Regulations').

While the City of Fairfield did prepare an EAP for Pennsylvania Creek Dam in June 2016, there does not appear to be any record of inundation maps being created. We understand that the City wishes to comply

with Water Code Section 6160 and 6161 and the emergency regulations by preparing inundation maps and updating the existing EAP for Pennsylvania Creek Dam. To address the City's need, Mead & Hunt proposes to provide the following services.

Scope of Services

Task 1 – Preparatory Activities

Site Visit and Project Kickoff: Mead & Hunt will perform a web/telephonic kickoff meeting with the City to discuss the work plan, schedule, and data needs. Mead & Hunt staff will perform a visit of Pennsylvania Creek Dam and also perform a windshield survey of the potential inundation area to document size and location of culverts, bridges, and other significant flow-directing features.

Data Collection and Review: Mead & Hunt will review available drawings, maps, terrain and hydrologic data, and county/state standards for deliverables.

Task 2 – Inundation Study

All tasks described in this section will be performed in accordance with Water Code Sections 6160 and 6161, the DWR Emergency Regulations for Inundation Maps adopted on October 19, 2017 (23 CCR 335 et seq.), and FEMA P-946 *Federal Guidelines for Inundation Mapping of Flood Risks Associated with Dam Incidents and Failures* (2013) which is adopted into the DWR Emergency Regulations.

Hydraulic analysis: Mead & Hunt will use a two-dimensional (2D), unsteady flow HEC-RAS model for this work.

DWR Emergency Regulations do not require a storm-induced failure scenario, although one may be submitted in lieu of a sunny day failure scenario. Because the reservoir is designed to drain gradually and ultimately empty completely after cessation of inflow, some traditional sunny day failure scenario assumptions may not apply. Therefore, the sunny day failure scenario modeled will be like a post-storm scenario, with the initial reservoir water level at the maximum water storage elevation authorized in the DWR Certificate of Approval for the dam and non-flood season inflow prevailing. The failure scenario will utilize breach parameters as described in FEMA P-946.

Inundation boundaries and flood flow data will be produced by simulating the dam failure using HEC-RAS. The resulting inundation area to be depicted on the inundation map is assumed to principally follow Pennsylvania Creek, and not overflow into any separate drainage basin (e.g., Ledgewood Creek or Laurel Creek). It is assumed the outflow from the breach will flow into Peytonia Slough and then into Suisun Slough. The termination point for the inundation map is assumed to be at the Suisun Slough at a point no farther south than Deadman Island.

The assumed sources of elevation data for the 2D model include USGS 1/9 arc-second topographic grid data, LiDAR data collected over the San Francisco Bay area for FEMA circa 2004 (also

published by USGS), 10-meter topographic-bathymetric data completed by California DWR in 2012¹, and the nautical chart for Suisun Bay published by NOAA in 2010. Because the main channels of the Peytonia Slough and Suisun Slough do not appear to be well-represented in any of the digital elevation data sets, it is assumed that a channel will need to be imposed onto the terrain in HEC-RAS based on the sounding depths shown on the nautical chart. Manning's n roughness coefficient values will be developed based on aerial imagery and limited field reconnaissance. Hydraulic structures will be added to the 2D model where bridges, culverts, or levees are expected to significantly alter the flow path.

Model boundary conditions will be developed consistent with the assumed sunny day failure scenario. A typical tidal water level pattern at the Suisun Slough will be included as a model input. The tidal water level boundary condition will be based on data from the closest tidal gage, with no adjustment assumed to the model boundary location.

Mapping and reporting: Mead & Hunt will develop an inundation map for Pennsylvania Creek Dam for the modeled sunny day failure scenario. PDF files of the draft map and a technical study report describing the methodology and assumptions will be submitted to the City for review. After receiving comments, the final map and a technical study report will be issued in PDF format. Digital files will also be provided to the City for submittal to DWR, as required in the DWR Emergency Regulations, to include a vector file of the inundation area boundary and raster files of the flood wave arrival time, maximum depth, peak velocity, and deflood time.

Task 3 – Review and Update Emergency Action Plan

EAP Review: Mead & Hunt will review the existing EAP dated June 2016 for compliance with Water Code section 6161. Any updates to the EAP necessary to reflect the new inundation map produced under Task 2 will be made to the EAP. A draft revised EAP will be provided for review by the City and other emergency response stakeholders. Mead & Hunt will attend one meeting with the City and its invitees. After receiving comments, Mead & Hunt will submit a final copy of the EAP in PDF format.

Assumptions

- Assumed lateral extents and downstream termination point of inundation mapping as described under Task 2 above.
- We assume that storm drains downstream of the dam will have negligible capacity to receive or convey dam breach flows during the modeled failure scenario due to the antecedent hydrologic conditions necessary to cause a hazardous release of water from the reservoir. Therefore, storm drain pipes will not be included in the model.
- The City will provide a designated representative with complete authority to transmit instructions and information, receive information, interpret policy, and define decisions.

¹ Bathymetric source data for Suisun Marsh area was collected circa 2005.

- The City will provide access to the project site, available data, drawings, and information related to the project.

Deliverables

- Draft and final inundation map and technical study report (PDF)
- Draft and final updated EAPs (PDF)
- Digital files as required in the DWR Emergency Regulations, including a vector file of the inundation area boundary and raster files of the flood wave arrival time, maximum depth, peak velocity, and deflood time

Schedule

- Draft map and EAP: 8 months after approval of scope of work
- Final map and EAP: 1 month after receiving City's comments on drafts

Responsibilities of City of Fairfield

Our Scope of Services and Compensation are based on the City performing or providing the following:

- Available data, drawings, and information related to Pennsylvania Creek Dam such as stage-storage curve, as-built drawings, outlet flow rating curves, etc.
- If requested by Mead & Hunt for specific features or drainage areas, provide available data, drawings, and information related to pertinent storm drainage infrastructure within the City's jurisdiction.
- If requested by Mead & Hunt for specific features or drainage areas, coordinate with owners of downstream storm drainage infrastructure to request pertinent information similar to above.
- A designated representative with complete authority to transmit instructions and information, receive information, interpret policy, and define decisions.
- Access to the project site.
- Protection of Mead & Hunt-supplied digital information or data, if any, from contamination, misuse, or changes.

Compensation

The work described under the Scope of Services will be performed on a lump-sum basis for a total sum of \$36,531. The task-wise breakdown of estimated cost is shown below.

Table 1: Task-wise breakdown of estimated cost

Task No.	Task Name	Labor	Expenses	Total Cost
1	Preparatory Activities	\$4,542	\$150	\$4,692
2	Inundation Study	\$27,991		\$27,991
3	Review Emergency Action Plan	\$3,848		\$3,848
TOTAL				\$36,531

We appreciate the opportunity to submit this proposal to the City.

Respectfully submitted,

MEAD & HUNT, Inc.



Rahul Ranade, PE
Senior Associate

EXHIBIT "B"

Standard Billing Rate For:

Pennsylvania Creek
Inundation Mapping and Emergency Action Plan Update

MEAD & HUNT, Inc.
Standard Billing Rate Schedule
Effective January 1, 2017

Standard Billing Rates

Clerical	\$73.00 / hour
Technical Editor	\$104.00 / hour
Senior Editor	\$168.00 / hour
Registered Land Surveyor	\$132.00 / hour
Accounting, Administrative Assistant.....	\$92.00 / hour
Technician I, Technical Writer	\$92.00 / hour
Technician II, Surveyor - Instrument Person	\$107.00 / hour
Technician III	\$122.00 / hour
Technician IV	\$137.00 / hour
Senior Technician	\$146.00 / hour
Engineer I, Scientist I, Architect I, Interior Designer I, Planner I	\$118.00 / hour
Engineer II, Scientist II, Architect II, Interior Designer II, Planner II	\$135.00 / hour
Engineer III, Scientist III, Architect III, Interior Designer III, Planner III	\$152.00 / hour
Senior Engineer, Senior Scientist, Senior Architect, Senior Interior Designer, Senior Planner, Senior Economist.....	\$168.00 / hour
Project Engineer, Project Scientist, Project Architect, Project Interior Designer, Project Planner	\$187.00 / hour
Senior Project Engineer, Senior Project Scientist, Senior Project Architect, Senior Project Interior Designer, Senior Project Planner	\$215.00 / hour
Senior Associate	\$240.00 / hour
Principal	\$262.00 / hour
Senior Client/Project Manager.....	\$262.00 / hour

Expenses

Geographic Information or GPS Systems	\$34.00 / hour
Total Station Survey Equipment	\$17.00 / hour
Charges for other equipment may appear in a proposal	
Out-Of-Pocket Direct Job Expenses.....	cost plus 15%
Such as reproductions, sub-consultants / contractors, etc.	

Travel Expense

Company or Personal Car Mileage	\$ IRS rate / mile
Air and Surface Transportation.....	cost plus 15%
Lodging and Sustenance	cost plus 15%

Billing & Payment

Travel time is charged for work required to be performed out-of-office. A minimum of two hours will be billed for any work out-of-office.

Invoicing is on a monthly basis for work performed. Payment for services is due within 30 days from the date of the invoice. An interest charge of 1.5% per month is made on the unpaid balance starting 30 days after the date of invoice.

This schedule of billing rates is effective until December 31, 2018; unless unforeseen increases in operational costs are encountered. We reserve the right to change rates to reflect such increases.

AGREEMENT FOR DESIGN SERVICE
PENNSYLVANIA CREEK DAM
INUNDATION MAPPING AND EMERGENCY ACTION PLAN UPDATE

THIS AGREEMENT, made and entered into as of January 24 2018, by and between the CITY OF FAIRFIELD, a municipal corporation, hereinafter referred to as "CITY" and MEAD & HUNT, INC., a Wisconsin corporation, hereinafter referred to as "CONSULTANT."

RECITALS

A. CITY desires to contract for certain consulting work necessary for the PENNSYLVANIA CREEK DAM INUNDATION MAPPING AND EMERGENCY ACTION PLAN UPDATE, and for the purposes of this Agreement shall be called "PROJECT," and,

B. CONSULTANT is willing and qualified to undertake the consulting work;

NOW, THEREFORE, in consideration of the mutual promises, covenants and agreements herein set forth, the parties do hereby agree as follows:

AGREEMENT

I. DUTIES OF CONSULTANT

The CONSULTANT shall provide professional consulting services required for design and update of the PROJECT as follows (collectively, "Consultant's Services"):

A. Project Coordination. The CONSULTANT's primary contact with the CITY shall be the CITY's Project Manager (David Vong) or any other as designated by the City Engineer.

- B. Project Scope. The CONSULTANT shall provide the engineering design services in accordance with the Scope of Work attached hereto as Exhibit "A" and incorporated herein by this reference.
- C. CONSULTANT shall, at its sole cost and expense, furnish all facilities and equipment, which may be required for furnishing services pursuant to this Agreement.

II. DUTIES OF CITY

The CITY shall:

- A. Make available previous plans, reports, and all other data relative to the design of the PROJECT and full information as to the CITY's requirements, including title reports and condemnation guarantees as required.
- B. Review preliminary and final plans, specifications, estimates, and other documents presented by CONSULTANT and render decisions within a reasonable time, and give prompt notice to CONSULTANT at any time CITY observes or otherwise becomes aware of any error, omission, or defect in the PROJECT.
- C. Provide soils reports if necessary.
- D. Provide for all necessary environmental clearances.
- E. Reproduce and distribute bid documents, advertise the project for bidding purposes, maintain a plan holders list, and distribute addenda.
- F. Provide construction management services as required.
- G. Provide construction inspection and red-lined drawings from which CONSULTANT shall prepare "Record Drawings".
- H. Make all necessary provisions for CONSULTANT to enter upon public and private property as required in the performance of Consultant's Services under this Agreement.

III. MISCELLANEOUS PROVISIONS

- A. CONSULTANT shall not assign any rights or duties under this Agreement to a third party without the prior written consent of CITY.

- B. It is understood by and between the parties hereto that CONSULTANT, in the performance of this Agreement, shall act as, and be, an independent contractor and not an agent or employee of CITY. CITY shall have the right to control CONSULTANT only insofar as the results of CONSULTANT's Services rendered pursuant to this Agreement; however, CITY shall not have the right to control the means by which CONSULTANT accomplishes the Consultant's Services rendered pursuant to this Agreement.
- C. CONSULTANT represents and warrants to CITY that CONSULTANT has all licenses, permits, qualifications and approvals of whatsoever nature which are legally required for CONSULTANT to practice CONSULTANT'S profession. CONSULTANT represents and warrants to CITY that CONSULTANT shall, at its sole cost and expense, keep in effect at all times during the term of this Agreement, any licenses, permits, and approvals which are legally required for CONSULTANT to practice his or her profession.
- D. Except as CITY may specify in writing, CONSULTANT shall have no authority, express or implied, to act on behalf of CITY in any capacity whatsoever as an agent. CONSULTANT shall have no authority, express or implied, pursuant to this Agreement, to bind CITY to any obligation whatsoever.
- E. CONSULTANT shall assign only competent personnel to perform Consultant's Services. In the event that CITY, for reasonable cause, at anytime during the term of this Agreement, desires the removal of any person or persons assigned by CONSULTANT to perform Consultant's Services, CONSULTANT shall remove any such person immediately upon receiving notice from CITY of the desire of CITY for the removal of such person or persons.
- F. CONSULTANT shall perform Consultant's Services in the manner and according to the standards observed by a competent practitioner of the profession in which CONSULTANT is engaged in the geographical area in which CONSULTANT practices his or her profession. All products of

whatsoever nature which CONSULTANT delivers to CITY pursuant to this Agreement shall conform to the standards of quality normally observed by a person practicing in CONSULTANT's profession and in a manner reasonably satisfactory to City.

- G. CONSULTANT is not a "public official" for purposes of Government Code §§ 87200 et seq. CONSULTANT conducts research and arrives at conclusions with respect to his or her rendition of information, advice, recommendation or counsel independent of the control and direction of the CITY or any CITY official, other than normal contract monitoring. In addition, CONSULTANT possesses no authority with respect to any CITY decision beyond the rendition of information, advice, recommendation or counsel.
- H. The parties hereto agree to immediately and diligently proceed with their respective duties as set forth herein to the end that the PROJECT will be completed satisfactorily within the shortest reasonable time.
- I. The CONSULTANT is not responsible for delay, nor shall CONSULTANT be responsible for damages or be in default or deemed to be in default by reason of strikes, lockouts, accidents, or acts of God: or the failure of CITY to furnish timely information or to approve or disapprove CONSULTANT's Services promptly; or delay or faulty performance by CITY, other contractors, or governmental agencies; or any other delays beyond CONSULTANT's reasonable control.

IV. COMPENSATION OF CONSULTANT

- A. Basis of Compensation. For and in consideration of Consultant's Services, CITY agrees to pay CONSULTANT, and CONSULTANT agrees to accept from CITY as full compensation for said services the following maximum, not to exceed, amount(s) in accordance with the fee proposals attached as Exhibit "A"
 - 1. For those services described in Section I, compensation shall be on a lump sum basis with a maximum fee not to exceed

THIRTY-SIX THOUSAND FIVE HUNDRED THIRTY-ONE DOLLARS
(\$36,531).

B. Extra Work and Change Order Fee. Extra Work performed by the CONSULTANT for any work required by the CITY which is not specified as part of Consultant's Services in Section I, including but not limited to, any changes to CONSULTANT's Services including but not limited to contract change orders after the award of the construction contract by the City Council, or testimony in Court, shall be compensated by the use of the time and material fee rates of the attached Exhibit "B." No extra work will be compensated for unless required by CITY in writing.

C. Schedule of Payments.

1. CONSULTANT shall submit, and CITY shall pay, monthly invoices for work performed during the previous month. For the time and material services billing shall be based on the hourly and fee rate charges set forth in Exhibit "B" attached hereto, and on the number of hours expended on the PROJECT by each classification of employee.
2. In the event PROJECT is terminated, CITY shall pay to CONSULTANT full compensation for work performed up until the date of CONSULTANT's receipt of written notification to cease work on the PROJECT.
3. CONSULTANT shall notify the CITY in writing when the CONSULTANT's invoices total billing is within 25% of the contract compensation as indicated in Section IV.A.

V. TIME OF COMPLETION

Consultant's Services shall be completed no later than January 1, 2019.

VI. PROJECT MANAGER

CONSULTANT designates Rahul Ranade as Project Manager, to remain such unless or until CONSULTANT requests to change said designation and said request is approved by CITY. Major duties shall include:

- A. Personally direct all work essential to the PROJECT.
- B. Sign all letters and instruments as requested by, and on behalf of, CITY.
- C. Attend public meetings related to the PROJECT.

VII. CANCELLATION OF AGREEMENT

This Agreement may be canceled at any time by CITY for its convenience upon written notification to CONSULTANT. CONSULTANT shall be entitled to receive full compensation payment for all services performed and all costs incurred to the date of receipt of written notice to cease work on the PROJECT. Said compensation will be determined in accordance with Section IV. CONSULTANT shall be entitled to no further compensation for work performed after the date of receipt of written notice to cease work on the PROJECT.

VIII. INDEMNIFY AND HOLD HARMLESS

- A. Indemnity for Design Professional Services. In connection with its design professional services hereunder, Consultant shall hold harmless and indemnify City, and its elected officials, officers, employees, servants, designated volunteers, and those City agents serving as independent contractors in the role of City officials (collectively, "Indemnitees"), with respect to any and all claims, demands, damages, liabilities, losses, costs or expenses, including reimbursement of attorneys' fees and costs of defense (collectively, "Claims" hereinafter), including but not limited to Claims relating to death or injury to any person and injury to any property, which arise out of, pertain to, or relate to in whole or in part to the negligence, recklessness, or willful misconduct of Consultant or any of its officers, employees, subcontractors, or agents in the performance of its design professional services under this Agreement.
- B. Other Indemnities. In connection with any and all claims, demands, damages, liabilities, losses, costs or expenses, including attorneys' fees and costs of defense (collectively, "Damages" hereinafter) not covered by Section VIII. A, Consultant shall defend, hold harmless and indemnify the

Indemnitees with respect to any and all Damages, including but not limited to, Damages relating to death or injury to any person and injury to any property, which arise out of, pertain to, or relate to the acts or omissions of Consultant or any of its officers, employees, subcontractors, or agents in the performance of this Agreement, except for such loss or damage arising from the sole negligence or willful misconduct of the City, as determined by final arbitration or court decision or by the agreement of the parties. Consultant shall defend Indemnitees in any action or actions filed in connection with any such Damages with counsel of City's choice, and shall pay all costs and expenses, including all attorneys' fees and experts' costs actually incurred in connection with such defense. Consultant's duty to defend pursuant to this Section VIII. B shall apply independent of any prior, concurrent or subsequent misconduct, negligent acts, errors or omissions of Indemnitees.

- C. Survival of Indemnification Obligations. Acceptance of insurance certificates and endorsements required under this Agreement does not relieve CONSULTANT from liability under this indemnification and hold harmless clause. The Indemnities in this Section VIII shall apply whether or not such insurance policies shall have been determined to be applicable to any of such damages or claims for damages.

IX. INSURANCE

During the term of this Agreement CONSULTANT shall obtain and maintain in full force and effect at his/her own cost and expense the following insurance coverage:

- A. Worker's Compensation Insurance. Worker's Compensation Insurance, as required by the State of California, shall be provided that is necessary in connection with the performance of this Agreement. Such insurance shall relieve CITY from all responsibility for such benefits. Said policy shall also include employer's liability coverage no less than one million dollars (\$1,000,000.00) per accident for bodily injury and disease.

- B. General Liability Insurance. CONSULTANT shall obtain at its sole cost and keep in full force and effect during the term of this agreement commercial general liability insurance in the amount of one million dollars (\$1,000,000.00) per occurrence for bodily injury, personal injury, and property damage. Said insurance shall provide (1) that the CITY, its officers, agents, employees, and volunteers shall be named as additional insureds under the policy, and (2) that the policy shall operate as primary insurance, and that (3) no other insurance effected by the CITY or other named insureds will be called upon to cover a loss covered thereunder.
- C. Automobile Liability Insurance. CONSULTANT shall obtain at its sole cost and keep in full force and effect during the term of this agreement automobile liability insurance in the amount of one million dollars (\$1,000,000.00) per occurrence for bodily injury and property damage. Said insurance shall provide (1) that the CITY, its officers, agents, employees, and volunteers shall be named as additional insureds under the policy, and (2) that the policy shall operate as primary insurance, and that (3) no other insurance effected by the CITY or other named insureds will be called upon to cover a loss covered thereunder.
- D. Certificates of Insurance. CONSULTANT shall file with the CITY's Director of Public Works upon the execution of this agreement, certificates of insurance which shall provide that no cancellation, major change in coverage, expiration, or renewal will be made during the term of this Agreement, without thirty (30) days written notice to the Director of Public Works prior to the effective date of such cancellation, or change in coverage.
- E. Professional Liability Insurance. During the term of this Agreement, CONSULTANT shall maintain a professional liability insurance policy covering any loss arising out of errors, omissions, or negligent actions of CONSULTANT in the amount of not less than one million dollars (\$1,000,000.00).

X. OWNERSHIP OF DOCUMENTS

All documents prepared by CONSULTANT in the performance of his or her duties under this Agreement, including but not limited to, the plans, reproducible mylar plans, specifications, studies, reports, and contract documents shall be the property of the City of Fairfield. If this Agreement is canceled in accordance with Section VII above, all completed and partially completed documents prepared by CONSULTANT shall be delivered to the CITY in both printed and electronic format within two weeks of notice of cancellation. CONSULTANT shall not obtain or attempt to obtain copyright protection as to any documents prepared hereunder.

XI. SCOPE OF AGREEMENT

This writing constitutes the entire agreement between the parties relative to CONSULTING services on the PROJECT and no modification hereof shall be effective unless or until such modification is evidenced by a writing signed by both parties to this Agreement.

XII. PROHIBITED INTERESTS

No employee of the City of Fairfield shall have any direct financial interest in this Agreement. This Agreement shall be voidable at the option of the CITY if this provision is violated.

XIII. LOCAL EMPLOYMENT POLICY

- A. The City of Fairfield desires wherever possible to hire qualified local residents to work on City projects. Local resident is defined as a person who resides in Solano County.
- B. The City encourages an active affirmative action program on the part of its contractors, consultants, and developers.
- C. When local projects require, subcontractors, contractors, consultants, and developers will solicit proposals from qualified local firms where possible.
- D. As a way of responding to the provisions of the Davis-Bacon Act and this program, contractors, consultants, and developers will be asked to provide

no more frequently than monthly, a report which lists the employee's name, job class, hours worked, salary paid, City of residence, and ethnic origin.

XIV. EMPLOYMENT DEVELOPMENT DEPT. REPORTING REQUIREMENTS.

When CITY executes an agreement for or makes payment to CONSULTANT in the amount of \$600 (six hundred dollars) or more in any one calendar year, CONSULTANT shall provide the following information to CITY to comply with Employment Development Department (EDD) reporting requirements:

- A. Whether CONSULTANT is doing business as a sole proprietorship, partnership, limited liability partnership, corporation, limited liability corporation, non-profit corporation or other form of organization.
- B. If CONSULTANT is doing business as a sole proprietorship, CONSULTANT shall provide the full name, address and social security number or federal tax identification number of the sole proprietor.
- C. If CONSULTANT is doing business as other than a sole proprietorship, CONSULTANT shall provide CONSULTANT's federal tax identification number.

XV. MISCELLANEOUS PROVISIONS

A. Legal Action.

- 1. Should either party to this Agreement bring legal action against the other, the validity, interpretation, and performance of this Agreement shall be controlled by and construed under the laws of the State of California, excluding California's choice of law rules. Venue for any such action relating to this Agreement shall be in the Solano County Superior Court.
- 2. If any legal action or other proceeding, including action for declaratory relief, is brought for the enforcement of this Agreement or because of an alleged dispute, breach, default or misrepresentation in connection with this Agreement, the prevailing party shall be entitled to recover

reasonable attorneys' fees, experts' fees, and other costs, in addition to any other relief to which the party may be entitled.

3. Should any legal action about a project between CITY and a party other than CONSULTANT require the testimony of CONSULTANT when there is no allegation that CONSULTANT was negligent, CITY shall compensate CONSULTANT for its testimony and preparation to testify at hourly rates that are agreed-upon in advance in writing by both parties.

- B. Entire Agreement; Modification. This Agreement, including any other documents incorporated herein by specific reference, represents the entire and integrated agreement between CITY and CONSULTANT and supersedes all prior negotiations, representations or agreements, either written or oral. This Agreement may be modified or amended, or provisions or breach may be waived, only by subsequent written agreement signed by both parties.
- C. Non-Waiver of Terms, Rights and Remedies. Waiver by either party of any one or more of the conditions of performance under this Agreement shall not be a waiver of any other condition of performance under this Agreement. In no event shall the making by the CITY of any payment to CONSULTANT constitute or be construed as a waiver by the CITY of any breach of covenant, or any default which may then exist on the part of CONSULTANT, and the making of any such payment by the CITY shall in no way impair or prejudice any right or remedy available to the CITY with regard to such breach or default.
- D. Time. Time is of the essence in the performance of this Agreement.
- E. Severability. If any term or portion of this Agreement is held to be invalid, illegal, or otherwise unenforceable by a court of competent jurisdiction, the remaining provisions of this Agreement shall continue in full force and effect.
- F. Notices
Except as otherwise required by law, any notice, request, direction, demand, consent, waiver, approval or other communication required or permitted to be given hereunder shall not be effective unless it is given in writing and

shall be delivered (a) in person or (b) by certified mail, postage prepaid, and addressed to the parties at the addresses stated below, or at such other address as either party may hereafter notify the other in writing as aforementioned:

To CITY:

ATTN: Julie B. Lucido

Assistant Public Works Director/City Engineer
City of Fairfield
Public Works Department
1000 Webster Street
Fairfield, CA 94533

To CONSULTANT:

ATTN: Rahul Ranade

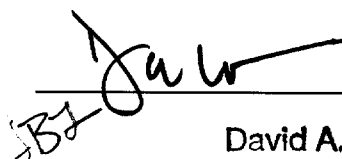
Senior Associate
Mead & Hunt, Inc.
180 Promenade Circle, Ste 240
Sacramento, CA 95834

A party may change its address by giving written notice to the other party. Thereafter, any notice or other communication shall be addressed and transmitted to the new address. If sent by mail, any notice, tender, demand, delivery or other communication shall be deemed effective three (3) business days after it has been deposited in the United States mail. For purposes of communicating these time frames, weekends and CITY holidays shall be excluded. No communication via facsimile or electronic mail shall be effective to give any such notice or other communication hereunder.

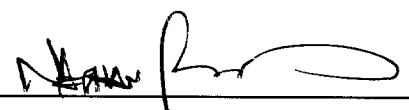
- G. Counterparts. This Agreement may be executed in counterparts, each of which shall be considered an original.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement as of
January 24, ~~2017~~²⁰¹⁸.

CITY OF FAIRFIELD
a municipal corporation (CITY)



David A. White
City Manager

By 

(CONSULTANT)

EXHIBIT "A"

Project Scope and Lump Sum Rate For:

Pennsylvania Creek
Inundation Mapping and Emergency Action Plan Update



12000 American Canyon Road, Suite 100
San Ramon, CA 94583
925.771.4396
meadandhunt.com

October 31, 2017

Ryan Panganiban
City of Fairfield
1000 Webster Street
Fairfield, CA 94533

Subject: Proposal for Inundation Mapping and Emergency Action Plan Update for Pennsylvania Creek Dam

Ryan:

Mead & Hunt, Inc. (Mead & Hunt) is pleased to submit this proposal to provide engineering services for the above-referenced project.

Project Understanding

The City of Fairfield (City) owns and operates the Pennsylvania Creek Dam located in the City of Fairfield, just north of the Travis Boulevard interchange off Interstate 80. The dam, constructed in 1958, consists of a 3,100-foot-long earthfill structure which creates a storage capacity of 148 acre-feet. The maximum height of the dam is 14 feet.

The purpose of the reservoir formed by the dam is to retain stormwater inflows to control flooding. The reservoir receives natural inflows from 1.7 square miles of watershed area. Approximately a quarter of this contributing area consists of the fully developed areas south of the Putah South Canal, while the rest is the largely undeveloped area north of the canal. The reservoir is designed to drain completely after a storm event. Outflow from a hypothetical breach of the Pennsylvania Creek Dam would drain to the Suisun Slough in Suisun City.

The Pennsylvania Creek Dam is regulated by the California Department of Water Resources (DWR) Division of Safety of Dams (DSOD) and identified as Dam No. 1052-002. Prior to July 2017, there was no enforceable requirement for dam owners in California to prepare inundation maps or EAPs. However, Water Code Sections 6160 and 6161, which came into effect on July 1, 2017, require dam owners to prepare an inundation map and EAP for each jurisdictional dam, unless the dam is classified as low-hazard. On October 19, 2017, emergency regulations proposed by DWR were accepted by the Office of Administrative Law (hereinafter referred to as 'DWR Emergency Regulations').

While the City of Fairfield did prepare an EAP for Pennsylvania Creek Dam in June 2016, there does not appear to be any record of inundation maps being created. We understand that the City wishes to comply

with Water Code Section 6160 and 6161 and the emergency regulations by preparing inundation maps and updating the existing EAP for Pennsylvania Creek Dam. To address the City's need, Mead & Hunt proposes to provide the following services.

Scope of Services

Task 1 – Preparatory Activities

Site Visit and Project Kickoff: Mead & Hunt will perform a web/telephonic kickoff meeting with the City to discuss the work plan, schedule, and data needs. Mead & Hunt staff will perform a visit of Pennsylvania Creek Dam and also perform a windshield survey of the potential inundation area to document size and location of culverts, bridges, and other significant flow-directing features.

Data Collection and Review: Mead & Hunt will review available drawings, maps, terrain and hydrologic data, and county/state standards for deliverables.

Task 2 – Inundation Study

All tasks described in this section will be performed in accordance with Water Code Sections 6160 and 6161, the DWR Emergency Regulations for Inundation Maps adopted on October 19, 2017 (23 CCR 335 et seq.), and FEMA P-946 *Federal Guidelines for Inundation Mapping of Flood Risks Associated with Dam Incidents and Failures* (2013) which is adopted into the DWR Emergency Regulations.

Hydraulic analysis: Mead & Hunt will use a two-dimensional (2D), unsteady flow HEC-RAS model for this work.

DWR Emergency Regulations do not require a storm-induced failure scenario, although one may be submitted in lieu of a sunny day failure scenario. Because the reservoir is designed to drain gradually and ultimately empty completely after cessation of inflow, some traditional sunny day failure scenario assumptions may not apply. Therefore, the sunny day failure scenario modeled will be like a post-storm scenario, with the initial reservoir water level at the maximum water storage elevation authorized in the DWR Certificate of Approval for the dam and non-flood season inflow prevailing. The failure scenario will utilize breach parameters as described in FEMA P-946.

Inundation boundaries and flood flow data will be produced by simulating the dam failure using HEC-RAS. The resulting inundation area to be depicted on the inundation map is assumed to principally follow Pennsylvania Creek, and not overflow into any separate drainage basin (e.g., Ledgewood Creek or Laurel Creek). It is assumed the outflow from the breach will flow into Peytonia Slough and then into Suisun Slough. The termination point for the inundation map is assumed to be at the Suisun Slough at a point no farther south than Deadman Island.

The assumed sources of elevation data for the 2D model include USGS 1/9 arc-second topographic grid data, LiDAR data collected over the San Francisco Bay area for FEMA circa 2004 (also

published by USGS), 10-meter topographic-bathymetric data completed by California DWR in 2012¹, and the nautical chart for Suisun Bay published by NOAA in 2010. Because the main channels of the Peytonia Slough and Suisun Slough do not appear to be well-represented in any of the digital elevation data sets, it is assumed that a channel will need to be imposed onto the terrain in HEC-RAS based on the sounding depths shown on the nautical chart. Manning's n roughness coefficient values will be developed based on aerial imagery and limited field reconnaissance. Hydraulic structures will be added to the 2D model where bridges, culverts, or levees are expected to significantly alter the flow path.

Model boundary conditions will be developed consistent with the assumed sunny day failure scenario. A typical tidal water level pattern at the Suisun Slough will be included as a model input. The tidal water level boundary condition will be based on data from the closest tidal gage, with no adjustment assumed to the model boundary location.

Mapping and reporting: Mead & Hunt will develop an inundation map for Pennsylvania Creek Dam for the modeled sunny day failure scenario. PDF files of the draft map and a technical study report describing the methodology and assumptions will be submitted to the City for review. After receiving comments, the final map and a technical study report will be issued in PDF format. Digital files will also be provided to the City for submittal to DWR, as required in the DWR Emergency Regulations, to include a vector file of the inundation area boundary and raster files of the flood wave arrival time, maximum depth, peak velocity, and deflood time.

Task 3 – Review and Update Emergency Action Plan

EAP Review: Mead & Hunt will review the existing EAP dated June 2016 for compliance with Water Code section 6161. Any updates to the EAP necessary to reflect the new inundation map produced under Task 2 will be made to the EAP. A draft revised EAP will be provided for review by the City and other emergency response stakeholders. Mead & Hunt will attend one meeting with the City and its invitees. After receiving comments, Mead & Hunt will submit a final copy of the EAP in PDF format.

Assumptions

- Assumed lateral extents and downstream termination point of inundation mapping as described under Task 2 above.
- We assume that storm drains downstream of the dam will have negligible capacity to receive or convey dam breach flows during the modeled failure scenario due to the antecedent hydrologic conditions necessary to cause a hazardous release of water from the reservoir. Therefore, storm drain pipes will not be included in the model.
- The City will provide a designated representative with complete authority to transmit instructions and information, receive information, interpret policy, and define decisions.

¹ Bathymetric source data for Suisun Marsh area was collected circa 2005.

- The City will provide access to the project site, available data, drawings, and information related to the project.

Deliverables

- Draft and final inundation map and technical study report (PDF)
- Draft and final updated EAPs (PDF)
- Digital files as required in the DWR Emergency Regulations, including a vector file of the inundation area boundary and raster files of the flood wave arrival time, maximum depth, peak velocity, and deflood time

Schedule

- Draft map and EAP: 8 months after approval of scope of work
- Final map and EAP: 1 month after receiving City's comments on drafts

Responsibilities of City of Fairfield

Our Scope of Services and Compensation are based on the City performing or providing the following:

- Available data, drawings, and information related to Pennsylvania Creek Dam such as stage-storage curve, as-built drawings, outlet flow rating curves, etc.
- If requested by Mead & Hunt for specific features or drainage areas, provide available data, drawings, and information related to pertinent storm drainage infrastructure within the City's jurisdiction.
- If requested by Mead & Hunt for specific features or drainage areas, coordinate with owners of downstream storm drainage infrastructure to request pertinent information similar to above.
- A designated representative with complete authority to transmit instructions and information, receive information, interpret policy, and define decisions.
- Access to the project site.
- Protection of Mead & Hunt-supplied digital information or data, if any, from contamination, misuse, or changes.

Compensation

The work described under the Scope of Services will be performed on a lump-sum basis for a total sum of \$36,531. The task-wise breakdown of estimated cost is shown below.

Table 1: Task-wise breakdown of estimated cost

Task No.	Task Name	Labor	Expenses	Total Cost
1	Preparatory Activities	\$4,542	\$150	\$4,692
2	Inundation Study	\$27,991		\$27,991
3	Review Emergency Action Plan	\$3,848		\$3,848
TOTAL				\$36,531

We appreciate the opportunity to submit this proposal to the City.

Respectfully submitted,

MEAD & HUNT, Inc.



Rahul Ranade, PE
Senior Associate

EXHIBIT "B"

Standard Billing Rate For:

Pennsylvania Creek
Inundation Mapping and Emergency Action Plan Update

MEAD & HUNT, Inc.
Standard Billing Rate Schedule
Effective January 1, 2017

Standard Billing Rates

Clerical	\$73.00 / hour
Technical Editor	\$104.00 / hour
Senior Editor	\$168.00 / hour
Registered Land Surveyor	\$132.00 / hour
Accounting, Administrative Assistant	\$92.00 / hour
Technician I, Technical Writer	\$92.00 / hour
Technician II, Surveyor - Instrument Person	\$107.00 / hour
Technician III	\$122.00 / hour
Technician IV	\$137.00 / hour
Senior Technician	\$146.00 / hour
Engineer I, Scientist I, Architect I, Interior Designer I, Planner I	\$118.00 / hour
Engineer II, Scientist II, Architect II, Interior Designer II, Planner II	\$135.00 / hour
Engineer III, Scientist III, Architect III, Interior Designer III, Planner III	\$152.00 / hour
Senior Engineer, Senior Scientist, Senior Architect, Senior Interior Designer, Senior Planner, Senior Economist	\$168.00 / hour
Project Engineer, Project Scientist, Project Architect, Project Interior Designer, Project Planner	\$187.00 / hour
Senior Project Engineer, Senior Project Scientist, Senior Project Architect, Senior Project Interior Designer, Senior Project Planner	\$215.00 / hour
Senior Associate	\$240.00 / hour
Principal	\$262.00 / hour
Senior Client/Project Manager	\$262.00 / hour

Expenses

Geographic Information or GPS Systems	\$34.00 / hour
Total Station Survey Equipment	\$17.00 / hour
Charges for other equipment may appear in a proposal	
Out-Of-Pocket Direct Job Expenses	cost plus 15%
Such as reproductions, sub-consultants / contractors, etc.	

Travel Expense

Company or Personal Car Mileage	\$ IRS rate / mile
Air and Surface Transportation	cost plus 15%
Lodging and Sustenance	cost plus 15%

Billing & Payment

Travel time is charged for work required to be performed out-of-office. A minimum of two hours will be billed for any work out-of-office.

Invoicing is on a monthly basis for work performed. Payment for services is due within 30 days from the date of the invoice. An interest charge of 1.5% per month is made on the unpaid balance starting 30 days after the date of invoice.

This schedule of billing rates is effective until December 31, 2018, unless unforeseen increases in operational costs are encountered. We reserve the right to change rates to reflect such increases.